

REMARKS

Favorable reconsideration of this application in view of the above amendments and following remarks is respectfully requested.

Applicants appreciate the courtesies extended to Applicants representative during the personal interview held June 18, 2009. Applicant's statement of substance of the personal interview is incorporated into the above amendments and following remarks.

Claims 1-2, 4, 6-13, 15-18, 20-35 are pending in this application. Claims 25-34 are withdrawn from consideration. By this amendment, Claims 1, 12 and 13 are amended; and Claim 35 is added; and Claim 14 is cancelled herewith. It is respectfully submitted that no new matter is added by this amendment.

In the outstanding Office Action, Claims 12-14 were rejected under 35 U.S.C § 112, second paragraph; Claims 1, 7-9, 20-21 and 24 were rejected under 35 U.S.C § 102(b) as anticipated by EP 1271580 to Chone; Claims 10-14 were rejected under 35 U.S.C. § 103(a) as unpatentable over Chone; Claims 2, 4, 6, 15-18 and 22-23 were rejected under 35 U.S.C. § 103(a) as unpatentable over Chone in view of Usami.

With respect to the rejection under 35 U.S.C § 112, second paragraph, Claims 12 and 13 are amended and Claim 14 is cancelled by the present amendment. Accordingly, withdrawal of the 35 U.S.C § 112 rejection is respectfully requested.

With respect to the rejections under 35 U.S.C § 102(b) and 35 U.S.C. § 103(a) based on Chone and Usami, it is respectfully submitted that the applied art does not teach, suggest, or render obvious a film having a front face and a back face, the film including at least a first layer and a second layer, the first layer having only a first kind of particles of one average diameter or length, and the second layer having the first kind of particles and additionally a

second kind of particles, the second kind of particles having a larger average diameter or length than the first kind of particles, as recited in Claim 1.

Instead, Chone discusses a two-layer system having a first kind of particles of sizes lower than 30 nm and higher than 10 nm, and a second kind of particles of sizes higher than 100nm, and smaller than 200 nm. As such, Chone discusses a two-layer system wherein the second kind of particles have a larger diameter than the first kind of particles. Please see the discussion in [0026] and [0031] of Chone. Chone also discusses in [0031] that “it is preferable that the second layer is more porous (less dense) than the first layer” and in [0034] that “the most important role of the second layer is to increase the light scattering effect both because of the presence of the bigger metal oxide particles, and also because of the presence of pores.”

Further, Chone in [0032] discusses that preferably the average metal oxide particle size of the said second layer is similar to the one of the said first layer. The distribution of the metal oxide particle sizes of said second layer is from 10 to 200 nm with an average size from 30 to 50 nm, which is similar to the average particle size of the first layer. See for example [0026] of Chone. Thus, both layers of Chone clearly contain small size particles as well as big size particles, i.e. particles in the range from 10 to 200 nm. In contrast, the porous film as recited in Claim 1 includes a first layer with only one kind of particles (“a first kind of particles”) and a second layer which contains the first and, in addition thereto, a second kind of particles, which is bigger in size. These features are not taught or suggested by Chone.

With respect to the teachings of Usami, Usami discusses a dye-sensitized nano-crystalline photoelectrochemical cell, which includes a bilayer of TiO₂. The bilayer includes a small particle film and a large particle film. As best shown in Fig. 4 of Usami, the two types of TiO₂ particles used differ in their diameter. Accordingly, Usami does not disclose or suggest a first layer having only a first kind of particles of one average diameter or length and

a second layer having the first kind of particles and additionally a second kind of particles, the second kind of particles having a larger average diameter or length than the first kind of particles, as claimed. In accordance with one or more embodiments of the present invention, the scattering strength can be altered while keeping the adsorption strength at a substantially constant level.

Further, it would not have been obvious to one of ordinary skill in the art to modify Chone and Usami to arrive at the claimed invention. For example, Usami discusses the exclusive use of one type of particles in the first layer and the one type of larger particles in the second layer. According to Usami, such a structure leads to incident sunlight being confined in the dye sensitized nanocrystalline TiO₂ film. The optical confinement is also effective for long wavelength light which has smaller absorption coefficients. Again, in Usami, none of the layers individually have two different sized particles.

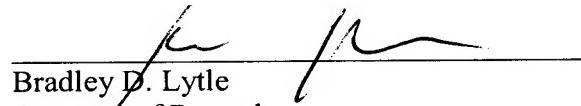
As such, the features of the claimed invention are not taught or suggested by the applied art either alone or in combination nor would it have been obvious to combine the teachings of the applied art. Withdrawal of the rejection of the claims under 35 U.S.C. § 102 and § 103 is respectfully requested.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below-listed telephone number.

Respectfully submitted,

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